

the body dilated from the periphery and bent round into the form of an umbrella or bell, without implicating the stomachal cavity in the change. The stomachal cavity then remains, somewhat as in the *Oceanidæ*, limited to the centre of the umbrella thus produced. The arms, with the ocelli and the annular vessel, on the contrary, advance by the whole length of the radii of the umbrella from their previous position, with which, of course, is associated a corresponding elongation of the radial canals.

In conclusion, as regards the relationship of *Eleutheria* to the established Medusoid genera, it has recently been placed by Gegenbaur, and as it appears to me with perfect justice, in the vicinity of the genus *Cladonema*, Duj. (*Zeitschr. für wiss. Zool.* Bd. viii. p. 230). In fact, both in structure and mode of life there appear to be many remarkable agreements between the two. In connexion with the first point, we must cite first of all the dichotomous division of the arms, which is certainly carried further in *Cladonema* during the development on the parent polype-stock (*Stauridium*), but still agrees perfectly with that occurring in *Eleutheria**, and secondly the comparatively high organization of the ocelli. As regards the second point, we know already from the observations of Dujardin that *Cladonema* sometimes, like *Eleutheria*, fixes itself by its arms, and remains for a considerable time in this state of repose. In the harbour of Messina, where this Medusa not unfrequently occurs, it lives chiefly, according to my observations, upon a confervoid Alga, which covers the sea-bottom in abundance, and it appears to come but rarely to the surface of the sea.

II.—On *Hanburia*, a Cucurbitaceous Genus from Mexico.

By BERTHOLD SEEMANN, Ph.D., F.L.S.

IN August 1854, Mr. William Schaffner found near Cordova, in the "Sierra caliente" of Mexico, a Cucurbitaceous plant with a fruit resembling in outward appearance the well-known "Chayote" or "Chayotl" of the Mexicans (*Sechium edule*, Jacq.), and bearing, on account of that resemblance, the vernacular name of "Chayotilla." A few seeds of it, which he transmitted, were, together with a collection of dried plants, purchased by the Royal Botanic Gardens at Kew; they were planted, but did not germinate. These seeds were flat, nearly orbicular in circumference, and about 2 inches long, having a very thin mem-

* Dujardin, *l. c.* 1843, tome xx. p. 372. According to Keferstcin and Ehlers ('*Zool. Beitr.*' 1861, p. 86), no more indication of a further ramification is to be detected in the arms of free young *Cladonemata*, measuring 0.8 mill. across the umbrella, than in *Eleutheria*.

branaceous epidermis, and resembling altogether so much those of *Fevillea* that I suggested they might possibly belong to that genus. Mr. Schaffner, on being informed of this suggestion, replied that he could not agree with me, as the complete specimens at his disposal enabled him to pronounce the *Chayotilla* a representative of a new and remarkable genus, differing from *Fevillea* by its setose-echinate fruit, and other characters. In order to convince me, he enclosed in a letter to our friend Mr. Scheer, of Northfleet, a fragment of the plant in question, afterwards presented by me to Sir W. J. Hooker's herbarium. This fragment, of which Mr. Fitch made a characteristic drawing, shortly to be published in the '*Bonplandia*,' was carefully examined and compared with all the Cucurbitaceæ in Sir William J. Hooker's and other large herbaria; but neither there nor in any published description or figure did I find any type approaching that of Schaffner's remarkable plant. I therefore assumed it to be quite a new genus, and seized the opportunity of conferring upon it, in honour of my esteemed friend Daniel Hanbury, Esq., F.L.S., the name of "*Hanburia*," in a paper read, July 1, 1858, before the Linnean Society, and published, on the 15th of August of the same year, in the '*Bonplandia*' (vol. vi. p. 293). Owing to the imperfect materials at my disposal, the generic character I was able to furnish remained in several particulars incomplete. This defect I am now able to remedy in some measure; for, shortly after the publication of my paper, two drawings, accompanied by a fair account of the plant, and addressed, as far back as 1850, by M. Hugo Fink, of Cordova, Mexico, to Sir William J. Hooker, were found at Kew, and kindly placed by Sir William at my disposal. M. Fink, avowing himself a self-taught botanist, and claiming indulgence if he should have used any unbotanical expressions, furnishes the following account, of which I have given an abstract in '*Bonplandia*' (vii. p. 2):—

"A perennial plant; roots not yet examined. Stem pentagonal, solid and very fibrous, tough (so that probably ropes might be manufactured from its fibres); climbing by means of tendrils to the height of from 60 to 80 feet, covering entire trees. As soon as the plant has attained the summit of a tree, the branches grow downwards, exactly as in *Vanilla* or *Begonia scandens*. Leaves cordate, smooth and glossy, on a long petiole, turning different ways. Flowers white, axillary and terminal, bell-shaped; corolla five-parted; calyx in five divisions, covering half the tube of the corolla, and terminating at each intersection of the corolla in a very small tooth. Stamens united in a hollow tube, terminating in a pentagonal, solid, almost round ball, having the form of the clapper of a bell. This ball, forming the anthers, is divided into five divisions, each of which

is divided into three double longitudinal lines bearing pollen; the latter is covered by a brittle tegument opening lengthwise. Flowers male and female. (On more than twenty occasions that I have been to the place where these plants grow, I have never met with a female flower: male flowers are very abundant at all seasons. I was already despairing of finding one, when last week I discovered several ripe fruits at the point of opening, five or six of which I took home for further examination. As yet, I have not been able to meet with a female flower, but shall do all in my power to obtain one.) Fruit oval, pointed at the apex, and crowned by the scar of the calyx (or corolla?), covered with numerous spines from 1 to 2 inches long. Ovary adherent, solitary, four-celled; ovules solitary, attached to a placentation formed by a column terminating in four claws like those of an animal, to each of which at its point an ovule is attached, one or two of which seldom arrive at maturity*. Seeds flat; testa horny; internal membrane thin, elastic, and veined; perisperm very abundant, bitter and purgative when raw, but having the taste of a walnut when cooked; embryo very small, flat; cotyledons foliaceous, mucilaginous; radicle straight, turned towards the hilum: the embryonary sac disappears in ripe seeds.

"Parts of the plant which are not exposed to the whole force of the sun ripen no fruit. From the fleshy part of the epicarp exudes a very transparent gum, clear as glass. The mesocarp of the fruit is composed of a network of numerous fibres, of a white colour, crossing each other in all directions. The plant is only found in the mountains of Mactactleahuatl, or in places contiguous to them. It flowers all the year round; but only towards the end of August and September ripe fruits are found.

"The squirrels eat the kernels greedily; but as the fruit is very spiny, they cannot attack it; however, being acquainted with its mode of opening, five or six of them are in waiting every morning, and as soon as a fruit bursts, hasten to devour the seeds. As soon as the rays of the sun reach a ripe fruit, it will open, but not before. The shock is so strong, that the fruit is severed from the stalk and thrown heavily to the ground, while the seeds are dispersed in different directions.

"Most curious is the manner in which the fruit opens. Towards seven o'clock in the morning, on a sunny day, the fruit splits from *a* to *b* (fig. 3 of the accompanying drawing), then from *b* to *c*, from *c* to *d*, from *d* to *e*; when the opening has attained the point *e*, the fruit turns the piece *A* completely round, forces the column composing the claws in a reclining position, at the same time throwing the seeds with great force several yards' distance. The sections *b f*, *c f*, *d f*, and *e f* open afterwards slowly. The first part of the process lasts about half a minute, and the latter one minute.

"HUGO FINK."

"Hacienda San Francisco, near Cordova,
Sept. 10, 1850."

* "Since then, I have remarked that in some fruit all the four ovules ripen; but generally one is abortive, as shown in fig. 2 o.—H. F."

The chief characters of *Hanburia* are its campanulate corolla, monadelphous stamens, longitudinally arranged anthers, peltate stigma borne on an elongated style, solitary pendulous ovules, and setoso-echinate fruit bursting open when fully ripe, like that of *Momordica*. In its monadelphous stamens and setoso-echinate fruit it approaches *Cyclanthera*; but the corolla of that genus is hemispherical, the anthers are arranged transversely, the stigma is sessile, and the ovules are horizontal and indefinite. In its definite ovules and shape of the seed it exhibits some relationship to *Fevillea*; but the fruit of that genus does not burst open, nor is it covered with spines. In any new arrangement of the genera of Cucurbitaceæ, *Hanburia* will probable form the type of a distinct tribe.

HANBURIA, Seem., in 'Bonplandia,' vol. vi. p. 293 (1858),
et 'Bonplandia,' vol. vii. p. 2 (1859).

Char. gen. emend.—*Flores* monoici. *Masc. Calyx* campanulatus, 5-dentatus. *Corolla* campanulata, calyci adnatim inserta, 5-fida, lobis triangularibus acutis. *Staminum* columna elongata in discum peltatum orbicularem margine antheriferum desinens; *antheræ* longitudinaliter adnatæ. *Fœm. Calyx* tubo oblongo cum ovario conato, limbo 5-partito. *Corolla* maris. *Ovarium* inferum, 4-loculare, loculis 1-ovulatis. *Ovula* pendula axi centrali adnata. *Stylus* elongatus. *Stigma* peltatum. *Bacca* ovata, pulposa, setoso-echinata, maturitate elastice irregulariter rupta. *Semina* pauca, plana, suborbiculata, margine incrassato cincta. *Embryonis* exalbuminosi cotyledones foliaceæ. Herba Mexicana, glabra, rhizomate perennante, caule 5-angulato, foliis longe petiolatis cordatis acuminatis integerrimis, cirrhis simplicibus spiraliter tortis, floribus axillaribus v. terminalibus pedunculatis albis, masculis racemosis, femineis solitariis.

Species unica :—

Hanburia mexicana, Seem., in 'Bonplandia,' vol. vi. p. 293 (1858),
et 'Bonplandia,' vol. vii. p. 2 (1859).

Nomen vernaculum Mexicanum "Chayotilla."

Prope Cordova, reipubl. Mexican. (W. Schaffner!).

22 Canonbury Square, London, N.

Nov. 21, 1861.

III.—On the Anatomy of *Sacculina*, with a Description of the Species. By JOHN ANDERSON, M.D.*

[Plate I.]

THREE years ago, I drew the attention of this Society to the fact of the frequent occurrence of *Sacculina* and *Peltogaster* on some

* Read before the Royal Physical Society of Edinburgh, Nov. 27, 1861